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this phrase is clear to a person of ordinary skill in the art based on well known absolute scales for common materials, Applicants have amended the claim for clarity. In particular, Applicants have replaced the quoted phrase with a phrase indicating that the composition comprises silica. In view of the amendments, the claim is certainly clear. Applicants respectfully request withdrawal of the rejection of claim 14 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1, 4-8, 11-12, 15-16, 41-43 and 45-53 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 5,879,827 to Debe (the Debe patent). In particular, the Examiner asserts that the Debe patent teaches the same material with the same function as disclosed in Applicants' specification and would thus be expected to have the same photonic band gap. The Examiner further asserts that the [range of average particle size is an optimizable feature.} Applicants respectfully assert that the Examiner has made legal and factual errors in the rejection of the claims, as explained below. Thus, the Examiner has failed to establish prima facie obviousness. Applicants incorporate by reference their discussion of this rejection from the Amendment of November 22, 2002 such that the present discussion focuses on the remaining particular aspect raised by the Examiner. Applicants respectfully request reconsideration of the rejection based on the following comments.

Prima facie obviousness is not established if all the elements of the rejected claim are not disclosed or suggested in the cited art. In re Ochiai, 37 USPQ 1127, 1131 (Fed. Cir. 1995). ("The test for obviousness *vel non* is statutory. It requires that one compare the claim's 'subject matter as a whole' with the prior art 'to which said subject matter pertains.'"). See also, MPEP 2143.03 "All Claim Limitations Must Be Taught or Suggested," citing In re Royka, 180 USPQ 580 (CCPA 1974). "To establish prima facie obviousness of a claimed invention, all of the claim

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limitations must be taught or suggested by the prior art." MPEP 2143.03. "It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps." In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991).

With all due respect, the Examiner is pointing to materials disclosed in the Debe patent without regard to their structural relationship to each other as disclosed in the Debe patent. As a result, the Examiner is reconstructing Applicants' invention using hindsight based on Applicants' disclosure as a template since the Debe patent does not teach, suggest or motivate the structure claimed in Applicants' application. Applicants' claimed invention relates to a self-assembled structure comprising inorganic particles. *same as else*

With respect to inorganic materials, the Examiner points to column 6, lines 62-65. However, these materials relate to a "substrate" not to a self-assembled structure or to particles. For support for nanoscopic particles, the Examiner points to column 4, lines 56-60 of the Debe patent. However, these nanoscopic particles are organic (perylene red), which are coated with an inorganic catalytic material, which are NOT self-assembled according to the teachings of the Debe patent. See, for example, the Debe patent at column 7, lines 16-67. For the assertion that these nanoscopic particles self-assemble, the Examiner (at the bottom of page 5 of the Office Action) points to the abstract, column 6, lines 1-14 and Fig. 4. Applicants do not understand this assertion since there is no discussion of self-assembly in the abstract or at column 6, lines 1-14, and Figures 4A and 4B are directed to an apparatus for practicing the processing of the Debe patent. In the middle of page 5 of the Office Action, the Examiner notes that the Debe patent discloses self-assembled layers at column 10, line 62. The self assembled layers relate to the coating material and not the acicular support particles described at column 4, lines 56-60. Furthermore, as noted previously by Applicants, these self-assembled layers at column 10, line 62 relate to conductive organic polymers and NOT to inorganic particles.

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The Examiner is attempting to assemble Applicants' invention from unrelated pieces of the disclosure in the Debe patent. This is clearly inappropriate hindsight reasoning based on Applicants' own disclosure.

Due to the clear deficiencies of the Debe patent with respect to Applicants' claimed invention, Applicants have not previously noted other clear deficiencies of the Debe patent. Specifically, the Debe patent does not teach, suggest or motivate self-assembled structures "localized in separate selected locations." In the Office Action of July 18, 2001, the Examiner pointed to column 12, lines 65-66 for the disclosure of discrete islands. However, the Debe patent does not teach the self-assembled separate islands/locations or selected locations. In the Debe patent at column 12, lines 65-66, the Debe patent discloses a sputtering process which does not involve either self-assembly or the formation of selected locations.

Since the Debe patent does not teach or suggest self-assembled structures comprising inorganic particles, let alone these self-assembled structures localized in separate selected locations, the Examiner has fallen far short of establishing prima facie obviousness. Applicants respectfully request withdrawal of the rejection of claims 1, 4-8, 11-12, 15-16, 41-43 and 45-53 under 35 U.S.C. § 103 as being unpatentable over the Debe patent.

Rejection Under 35 U.S.C. § 102

The Examiner rejected claims 1 and 8-12 under 35 U.S.C. § 102 as being unpatentable over U.S. Patent 5,751,018 to Alivisatos et al. (the Alivisatos patent). Applicants incorporate by reference their previous arguments from their response of November 22, 2002. In response to Applicants' previous arguments, the Examiner asserted that the Alivisatos patent "discloses self-assembled monolayers organized into an assembly of clusters (abstract; column 6, lines 1-14) and Figure 4 shows a plurality of separate, selected locations." Applicants respectfully submit that there has been a misunderstanding of both the nature of the disclosure of

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the Alivisatos patent and the nature of Applicants' claimed invention. Applicants address these points below. Applicants respectfully request reconsideration of the rejections based on the following comments.

The Examiner has the burden to establish a prima facie case of anticipation. As such, the Examiner must show that a single reference contains every element set forth in the claim, and "the identical invention must be shown in as complete detail as contained in the...claim." See MPEP § 2131 (emphasis added).

DN With respect to Figure 4 of the Alivisatos patent, the figure shows the inorganic particles covering an entire surface. These particles are neither organized into separate locations nor located at selected locations. It is not reasonable to interpret Applicants' claim such that each individual particle is a self-assembled location since that interpretation is inconsistent with the plain language of the claim and Applicants' specification. But even if you ignore the unreasonableness of the claim interpretation, the particles in Fig. 4 are clearly shown at random locations and not selected locations. The Alivisatos patent at the abstract and at column 6, lines 1-14 do not describe organizing the structures at "separate, selected locations." In particular, Applicants note that Applicants' claim 1 refers to plural "locations" in the material while the Alivisatos patent describes only a single location, the surface of a substrate.

Since the Alivisatos patent simply does not disclose "separate, selected locations," the Alivisatos patent does not anticipate Applicants' claimed invention. Applicants respectfully request withdrawal of the rejection of claims 1 and 8-12 under 35 U.S.C. § 102 as being unpatentable over the Alivisatos patent.

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CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is asked to telephone the undersigned if the Examiner believes that the application is not in condition for allowance.

Respectfully submitted,



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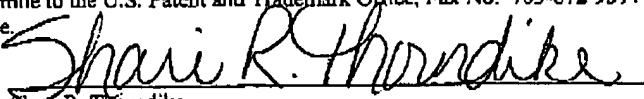
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April 15, 2003
Date


Shari R. Thorndike